

IF-4
\$**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Examiner: D. N. Richards

Dung-Ching Perng

Serial No. 10/824,754

Art Unit: 2815

Filed: April 15, 2004

Title: METHODS OF PORE SEALING AND METAL ENCAPSULATION IN
POROUS LOW K INTERCONNECTCommissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**INFORMATION DISCLOSURE STATEMENT
PURSUANT TO 37 C.F.R. §§1.97-1.98**

Dear Examiner:

In accordance with the duty of disclosure under 37 C.F.R. §1.56 and pursuant to 37 C.F.R. §§1.97-1.98, Applicant hereby notifies the U.S. Patent and Trademark Office of the references listed on the attached Form PTO-1449. Copies of the documents were previously submitted in an Information Disclosure Statement and/or Office Action, directed to the related application Serial Number 10/439,415, filed May 15, 2003. Accordingly, copies are not included herewith. This protocol conforms with 37 C.F.R. §1.98(d) and M.P.E.P. 609(A)(2). The Examiner is requested to make these documents of record in the application.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant reserves the right to dispute the listed documents as prior art during examination. Furthermore, Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application. The submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other material information may exist.

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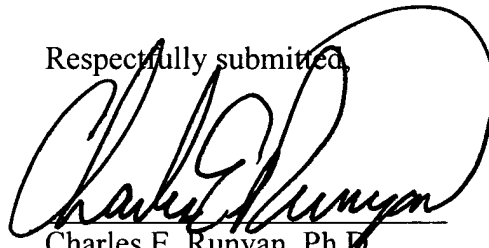
The Examiner is requested to initial the enclosed Form PTO-1449 and return a copy thereof to the undersigned.

The present Information Disclosure Statement is being submitted after receiving the first office action but before an action closing prosecution on the merits. Accordingly, please charge Deposit Account No. **07-1850** in the amount of \$180 as specified in 37 CFR §1.97(c) and 37 CFR §1.17(p).

Date: December 23 2004

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Respectfully submitted,

A large, stylized handwritten signature in black ink, appearing to read 'Charles E. Runyan', is written over the typed name and title.

Charles E. Runyan, Ph.D.
Attorney for Applicants
Reg. No. 43,066

Please type a plus sign (+) inside this box → ☐

PTO/SB/21 (08-00)

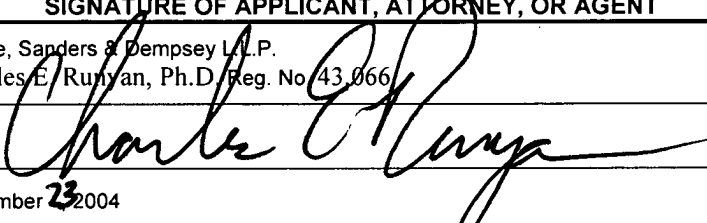
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PTO TRANSMITTAL FORM (to be used for all correspondence after initial filing) JAN 03 2005 PATENT & TRADEMARK OFFICE	Application Number	10/824,754	
	Filing Date	April 15, 2004	
	First Named Inventor	Dung-Ching Perng	
	Group Art Unit	2815	
	Examiner Name	D. N. Richards	
Total Number of Pages in This Submission (excluding references)	6	Attorney Docket Number	45271.00015

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Deposit Account 07-1850 Authorization	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
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<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Squire, Sanders & Dempsey L.L.P. Charles E. Runyan, Ph.D. Reg. No. 43,066
Signature	
Date	December 23 2004

CERTIFICATE OF MAILING			
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: December 24, 2004			
Typed or printed name	Vera Breder		
Signature		Date	December 24 2004

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INFORMATION DISCLOSURE CITATION in an Application

(Use several sheets if necessary)

Applicant

Dung-Ching Perng

Filing Date

April 15, 2004

Group Art Unit

2812

U.S. PATENT DOCUMENTS

Examiner Initial	Ref. No.	Document Number	Date of Patent	Name	Class	Subclass	Filing Date if Appropriate
	A1	5,874,355	2/23/99	Huang et al.			
	A2	5,969,422	10/19/99	Ting et al.			
	A3	6,217,721	4/17/01	Xu et al.			
	A4	6,294,836	9/25/01	Paranjpe et al.			
	A5	6,362,099	3/16/02	Gandikota et al.			
	A6	6,444,567	9/3/02	Besser et al.			
	A7	6,455,424	9/24/02	McTeer et al.			
	A8	6,468,906	10/22/02	Chan et al.			
	A9	6,495,200	12/17/02	Chan et al.			
	A10	6,635,964	10/21/03	Maex et al.			
	A11	6,664,187	12/16/03	Ngo et al.			
	A12	6,703,307	3/9/04	Lopatin et al.			

U.S. PATENT APPLICATION PUBLICATION DOCUMENTS

Examiner Initial	Ref. No.	Document Number	Date of Publication	Name	Class	Subclass	Filing Date if Appropriate
	A13	2002/0187632	12/12/02	Marsh			
	A14	2003/0203617	10/30/03	Lane et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initial	Ref. No.	Document Number	Date of Publication	Country	Class	Subclass	Translation	
							Yes	No
	B1							
	B2							
	B3							

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages etc.)

C1	Itabashi Takeyuki et al., <i>Electroless Deposited CoWB for Copper Diffusion Barrier Metal</i> , 2002 International Interconnect Technology Conference, pp. 285-287.
C2	Zylberman et al., <i>Comparative Study of Electroless Co(W,P) and Co(Mo,P) Thin-Films for Capping and Barrier Layers for Cu Metallization</i> , 2002 Advanced Metallization Conference, 2 pgs.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if references considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered.

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